



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,158	05/05/2005	Claas Bontus	PHDE020244US	2602
38107 7590 04/20/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS 595 MINER ROAD CLEVELAND, OH 44143			EXAMINER COCHRAN, ANTHONY K	
			ART UNIT	PAPER NUMBER
			2882	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/20/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/534,158

Applicant(s)

BONTUS ET AL.

Examiner

Anthony Cochran

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 05/05/2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Foreign Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 19(a)-(d). Conditions were met with the submission of a certified copy of application DE 102 52 661.3 filed on 11/11/2002, which has been placed of record in the file.

### ***Claim Objections***

In independent claim 1, line 18, "weighted" should be replaced by -- weighting --

In independent claim 1, line 11, should read -- reconstruction of an exact 3D back projection --

In dependent claim 4, line 10, "A reconstruction unit for reconstruction"" should be replaced by -- A reconstruction unit configured to reconstruct--

In dependent claim 4, line 13, "A control unit for controlling"" should be replaced by -- A control unit configured to control--

In dependent claim 4, lines 14 and 28, "claim 1" is referred to redundantly.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 5 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 5 claims a computer program. Computer programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.

### **Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 4-6 recite "generating a relative motion between the radiation source on the one side and the examination zone or the object on the other side, which relative motion comprises a rotation about an axis of rotation". This recitation is

confusing as it implies that the examination area is rotated about the axis of rotation, but clearly as in fig. 1, the axis (14) runs through the examination area.

Claim 1, lines 14-24 disclose reconstructing a CT image of the examination zone from measuring values comprising steps of determining the partial derivative of measuring values and weighted integration of the derived measuring values. This rest of the method is confusing insofar as the final step comprises reconstructing the absorption of each object point by back projection of the measuring values, and makes no use of the derived, or weight integrated measuring values.

The term "relevant" in claim 1 lines 19 and 21 is a relative term which renders the claim indefinite. The term "relevant" is not defined by the claim as it pertains to a measuring value. The specification does not provide a standard for ascertaining the requisite value, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 1 line 21 recites the limitation "the fan angle". There is insufficient antecedent basis for this limitation in the claim.

Claims 2-5 are rejected by virtue of their dependence.

The Examiner has examined the claims as best understood as follows.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ning (US 6075836 A).

With respect to claim 1, Ning disclosed a computed tomography method, which comprises the steps of:

generating (see fig. 9 and col 15 last paragraph), using a radiation source (910), a conical radiation beam (904) which traverses an examination zone or an object present therein (P),

acquiring measuring values which are dependent on the intensity in the radiation beam on the other side of the examination zone by means of a detector unit (911) during the relative motions,

reconstructing a CT image of the examination zone from the measuring values (928), in which reconstruction an exact 3D back projection (col 9, line 54) comprising the following steps is carried out: determining the partial derivative (col 9, line 4) of measuring values

reconstructing the absorption of each object point by back projection of the measuring values.

With respect to claim 2, Ning disclosed a computed tomography method as claimed in claim 1, in which in the reconstruction step rebinning (col 13, line 5) of the measuring values is performed prior to the back projection (abstract, last two

Art Unit: 2882

sentences) so as to form a number of groups, each group comprising a plurality of planes which extend parallel to one another and to the axis of rotation and in which a respective fan beam is situated.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ning as applied to claim 1 above, in further view of Popescu et al. (US 20040062341 A1).

With respect to claim 4, Ning disclosed a computer tomograph for carrying out the method claimed in claim 1, comprising:

a radiation source (910) in order to generate a radiation beam (904) which traverses an examination zone or an object present therein (P), a detector unit (911) which is coupled to the radiation source (see fig. 9), a drive arrangement which serves to displace an object present in the examination zone and the radiation source relative to one another (motorized table 906) about an axis of rotation and/or parallel to the axis of rotation (912, 913, and motorized table 906)

a reconstruction unit (928) for reconstructing the spatial distribution of the absorption within the examination zone from the measuring values acquired by the detector unit,

a control unit (924) for controlling the radiation source, the detector unit, the drive arrangement and the reconstruction unit.

Ning failed to disclose a diaphragm arrangement, which is situated between the examination zone and the radiation source.

Popescu et al. disclosed a diaphragm arrangement (see fig. 3, item 3), which is situated between the examination zone and the radiation source.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the tomograph of Ning to include a diaphragm as in Popescu et al., since a person would have been motivated to mediate the x-ray exposure in the examination zone.



With respect to claim 5, Ning disclosed the steps disclosed in claim 1.

Ning failed to disclose a computer program (system control computer 924) for a control unit for controlling a radiation source, a diaphragm arrangement, a detector unit, a drive arrangement and a reconstruction unit of a computer tomograph

Popescu et al. disclosed a computer program (see para 0023, computer 9, serves as the control computer) for a control unit for controlling a radiation source (1), a diaphragm arrangement (3), a detector unit (5), a drive arrangement (7) and a reconstruction unit (also 9) of a computer tomograph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of **Ning** to include the computer control system of Popescu et al., since a person would have been motivated to automatically manipulate and modify all aspects of the tomograph from one central location.

### ***Conclusion***

Claim 3 is allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Cochran whose telephone number is (571) 272-9794. The examiner can normally be reached on Monday - Friday from 8:00am to 5:00pm (EST).

Art Unit: 2882

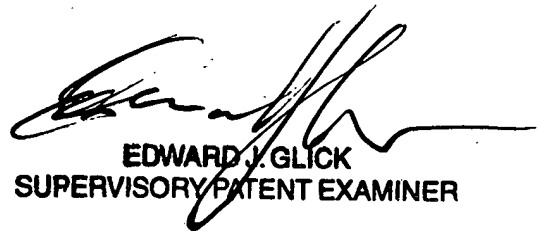
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick, can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



---

Anthony K. Cochran, M.S.  
Patent Examiner  
571-272-9794



EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER